



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-243



**Program Executive Office
Assembled Chemical Weapons Alternatives**

Chemical Demilitarization-Assembled Chemical Weapons Alternatives (Chem Demil-ACWA)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs	3
Program Information	5
Responsible Office	5
References	5
Mission and Description	6
Executive Summary	7
Threshold Breaches	9
Schedule	10
Performance	12
Track to Budget	14
Cost and Funding	15
Low Rate Initial Production	21
Foreign Military Sales	22
Nuclear Costs	22
Unit Cost	23
Cost Variance	26
Contracts	29
Deliveries and Expenditures	35
Operating and Support Cost	36

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Chemical Demilitarization-Assembled Chemical Weapons Alternatives (Chem Demil-ACWA)

DoD Component

DoD

Responsible Office

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 21, 2012

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 21, 2012

Mission and Description

Chemical Demilitarization-Assembled Chemical Weapons Alternatives (Chem Demil-ACWA) is performing a portion of the chemical warfare materiel elimination mission. In 1996, Congress and the President, responding to public concerns about the safe destruction of chemical weapons, established and later expanded the ACWA program (Public Laws 104-208, 105-261, 106-79, and 107-248). The DoD was charged with identifying and demonstrating two or more alternative technologies to incineration for the destruction of assembled chemical weapons. The DAE assigned PM ACWA the responsibility for developing neutralization technologies to eliminate the chemical weapons stockpiles located at Pueblo, CO, and Blue Grass, KY (July 16, 2002, and February 3, 2003, respectively). At the time of initiation, the ACWA program was known as the Assembled Chemical Weapons Assessment program. When the assessment phase was complete, the ACWA program shifted its focus from assessing chemical weapons destruction technologies to implementing full-scale pilot testing. As a result, the program was renamed Assembled Chemical Weapons Alternatives in June 2003, to better reflect the new program goals. To raise the program's visibility and obtain the necessary resources, PM ACWA was redesignated as the Program Executive Office, ACWA on October 1, 2012.

Executive Summary

This December 2015 SAR details changes to cost, schedule, and performance since last reported in the December 2014 SAR for Chem Demil-ACWA. Program funding and production quantities listed in this SAR are consistent with the FY 2017 PB.

The systemization completion percentage at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) increased by 22.5%; i.e., systemization is now 96% complete compared to the 73.5% complete reported in the December 2014 SAR.

The Construction completion percentage at the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) increased by 8%; i.e., construction of the destruction plant is 99% complete compared to the 91% complete reported in the December 2014 SAR. Construction has been declared substantially complete. Systemization is underway and is currently 43% complete compared to the 28% complete reported in the December 2014 SAR.

Since the 2011 Nunn-McCurdy review of the Chem Demil-ACWA program, increased emphasis has been placed on the early identification of risks and the close tracking of their potential impact on cost and schedule. Chem Demil-ACWA continues to evaluate ways to mitigate risks, shorten schedules, control costs, and safely accelerate the program.

PCAPP:

PCAPP is a fixed-base, single-use system designed to perform all necessary steps for destruction of the stockpile of chemical weapons in storage at Pueblo Chemical Depot (PCD), Colorado. The PCAPP project has completed the design and construction phases of the program. The project is currently completing the systemization phase, which is the preparatory phase where all processes and equipment are tested to ensure they are working properly and preparing for the operations phase. Operations are planned to begin on or before June 30, 2016.

As of January 31, 2016, systemization is 97% complete. The remaining closeout work consists of completing the Treaty Office Facility, completing and submitting the final Facility Construction Certification (FCC) packages, and submitting the final as-built drawings.

Equipment and system testing was the primary focus of the PCAPP effort for the majority of CY 2015, with emphasis on facilities and equipment turnover from systemization to operations along with focus on integrated operational equipment demonstrations, final crew certifications, readiness reviews, Biotreatment Area (BTA) risk reduction testing, and completion of procedures, plans and environmental permitting required for the initiation of plant operations on or before June 30, 2016. Approximately 80% (52 of 65) of the systems/facilities have been successfully turned over to Operations. Staffing of the Defense Acquisition Executive approval memo for the start of Operations is anticipated to begin 2nd quarter FY 2016.

The systemization schedule drivers during 2015 were primarily corrective actions associated with emergent issues discovered during systemization. These issues include items such as repairs to the Agent Processing Building roof, the Cascade Ventilation System, the Munitions Treatments Unit, and the weld repairs on the Spent Decontamination System, along with the addition of more Miniature Continuous Air Monitoring Systems. The sample line replacement of the Agent Monitoring System also continued.

PCAPP continues to work closely with the Colorado Department of Public Health and Environment (CDPHE) Hazardous Materials and Waste Management Division on specific testing and permitting items. PCAPP and CDPHE have conducted numerous meetings to resolve comments and questions regarding a number of Resource Conservation and Recovery Act permit and modification issues, required testing, and operational and emergency response planning. Changes, updates, progress, and prioritization of items within the systemization schedule forecast are discussed with CDPHE on a bi-weekly basis.

On February 11, 2016, the PCAPP Explosive Destruction System (EDS) completed demilitarization operations of Pueblo Chemical Depot's stockpile of overpacked munitions and Department of Transportation (DOT) bottles containing mustard agent previously drained from stockpile munitions. Destruction of the overpacked munitions and DOT bottles was paused

for an unplanned maintenance outage between August 7, 2015 and October 5, 2015. In total, 560 items were destroyed containing 1.91 U.S. tons of mustard agent.

BGCAPP:

BGCAPP is a fixed-base, single-use system designed to perform all necessary steps for destruction of the stockpile of chemical weapons in storage at Blue Grass Army Depot (BGAD), KY. The BGCAPP project has completed the design phase of the program. The project has declared construction substantially complete and is currently in the systemization phase. The systemization phase will be on going through 2018.

As of January 31, 2016, construction at BGCAPP is 99% complete. BGCAPP construction was declared substantially complete on July 31, 2015; total construction is forecasted to complete in 3rd quarter FY 2017. The modification of some of the equipment and piping associated with the Rocket Handling System Munitions Washout System, and Energetics Neutralization Reactor to mitigate the potential formation of undesirable corrosive and toxic byproducts progressed through the year and is expected to be completed in 2nd quarter FY 2016.

As of January 31, 2016, systemization is 43% complete. The Startup team continues to perform pre-commissioning and commissioning checks of the components on systems throughout the plant. Pre-commissioning testing activities (includes activities such as electrical continuity checks, motor vibration checks, pipe flushing, and air blows) are 65% complete plant-wide. Commissioning (focused on component testing and includes activities such as performing initial energizing and functional testing of components, and verifying component interlocks) of several key systems including the Off-gas Treatment System, Metal Parts Treater, and Energetics Neutralization System are underway.

Construction and procurement associated with the Static Detonation Chamber (SDC), which will be used for the safe destruction of the mustard munitions at Blue Grass Army Depot continue. After successfully completing the factory acceptance testing in June 2015, the SDC was disassembled, packaged for transport, and shipped to BGCAPP. Construction of the SDC Enclosure Building is ongoing and installation of the SDC began in December 2015. The Organisation for the Prohibition of Chemical Weapons requires intrusive sampling to verify the chemical agent fill; planning for this work is progressing on schedule. On October 1, 2015, the Kentucky Department for Environmental Protection approved the Temporary Authorization Request (TAR) that was submitted September 24, 2015. The Temporary Authorization allows the continuation and completion of construction of the Explosive Destruction Technology equipment, facilities, and limited testing. The SDC start of operations is scheduled for 4th quarter FY 2017, which will precede the 2018 start of operations of the main plant.

There are no significant software-related issues with this program at this time.

Threshold Breaches

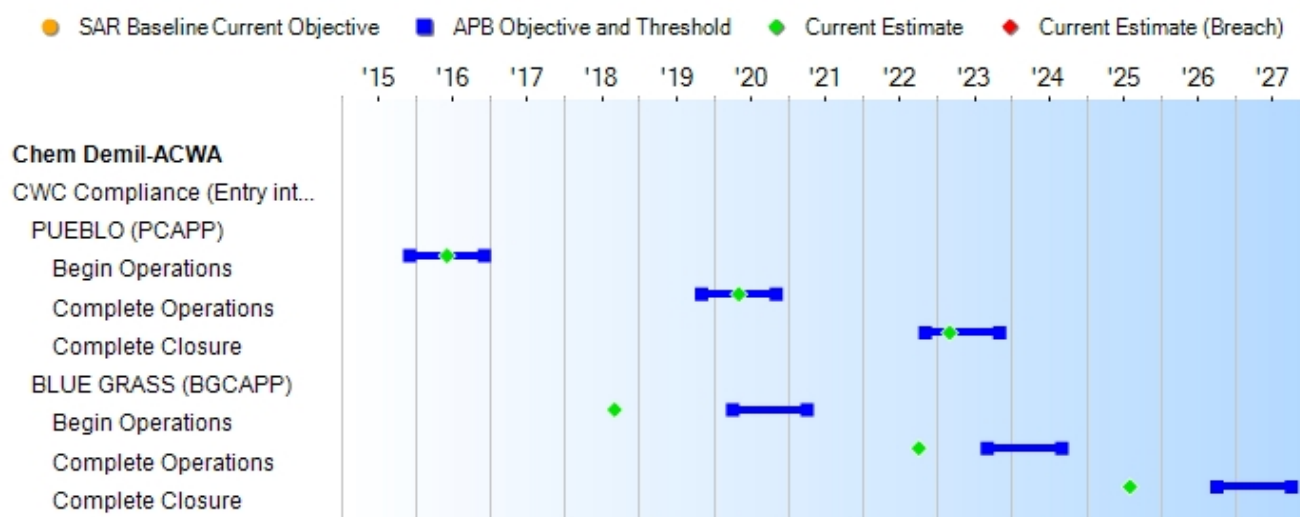
APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
CWC Compliance (Entry into Force April 29, 1997)				
PUEBLO (PCAPP)				
Begin Operations	Dec 2015	Dec 2015	Dec 2016	Jun 2016 (Ch-1)
Complete Operations	Nov 2019	Nov 2019	Nov 2020	May 2020 (Ch-1)
Complete Closure	Nov 2022	Nov 2022	Nov 2023	Mar 2023 (Ch-1)
BLUE GRASS (BGCAPP)				
Begin Operations	Apr 2020	Apr 2020	Apr 2021	Sep 2018 (Ch-2)
Complete Operations	Sep 2023	Sep 2023	Sep 2024	Oct 2022 (Ch-2)
Complete Closure	Oct 2026	Oct 2026	Oct 2027	Aug 2025 (Ch-2)

Change Explanations

(Ch-1) The current estimate for PCAPP Begin Operations, Complete Operations, and Complete Closure changed from Jan 2016, Mar 2020, and Dec 2022, to Jun 2016, May 2020, and Mar 2023 respectively due to emergent work delaying the start of Operations to supplement the fireproofing in the Agent Processing Building (APB), replace sample line of the Agent Monitoring System, and fix sealing of the APB and Enhance Reconfiguration Building to meet Heating, Ventilation, and Air Condition (HVAC) requirements.

(Ch-2) The current estimate for BGCAPP Begin Operations, Complete Operations, and Complete Closure changed from Oct 2018, Aug 2022, and Feb 2025, to Sep 2018, Oct 2022, and Aug 2025 respectively due to revisions to the risk register, and modification to the operational processing strategy.

Notes

The current estimates changed from the 2014 POE to the 2015 POE.

Acronyms and Abbreviations

BGCAPP - Blue Grass Chemical Agent-Destruction Pilot Plant

CWC - Chemical Weapons Convention

PCAPP - Pueblo Chemical Agent-Destruction Pilot Plant

POE - Program Office Estimate

Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Environmental Laws and Regulations				
Meets DoD, State, and/or Federal Require-ments	Meets DoD, State, and/or Federal Require-ments	Meets DoD, State, and/or Federal Require-ments	On Track	Meets DoD, State, and/or Federal Requirements
Safety and Occupational Health Laws and Regulations				
Meets DoD, State, and/or Federal Require-ments	Meets DoD, State, and/or Federal Require-ments	Meets DoD, State, and/or Federal Require-ments	On Track	Meets DoD, State, and/or Federal Requirements
Chemical Agent Release				
0	0	0	On Track	0
Chemical Agent Exposure				
0	0	0	On Track	0

Requirements Reference

Operational Requirements Document (ORD) dated September 2, 1994

Change Explanations

None

Notes

Environmental Laws and Regulations: Facility is operating in compliance with all conditions specified in environmental permits and applicable laws and regulations. The threshold is breached if violation of law or regulation warrants a stop-work order issued by the DoD, the State, the Department of Health and Human Services, or the Environmental Protection Agency and causes a schedule delay of more than 12 months.

Safety and Occupational Health Laws and Regulations: Facility is operating in compliance with the conditions specified in safety and occupational health laws and regulations. The threshold is breached if a violation warrants a stop-work order issued by DoD, the State, or the Occupational Safety and Health Administration and causes a schedule delay of more than 12 months.

Chemical Agent Release: An event involving chemical agent-destruction pilot plants or Explosive Destruction Technologies where the following occurs:

- Confirmed chemical agent release above the General Population Limit (GPL) at the installation boundary measured in accordance with the approved monitoring and/or modeling plan with the pilot plant as the identified source.
- Confirmed chemical agent release from the pilot plant's exhaust air filter stack above the allowable threshold limit. Allowable threshold limits are calculated as vapor screening level ceiling values.

Chemical Agent Exposure: Department of the Army Implementation Guidance Policy for Revised Airborne Exposure Limits (June 18, 2004) Appendices A and B, defines a chemical agent exposure as an event when an individual exhibits clinical

signs or symptoms of being exposed to chemical agent.

Track to Budget

RDT&E			
Appn		BA	PE
Defense-Wide	0390	02	0708007A
Project		Name	
		Chemical Agents and Munitions Destruction (Shared) (Sunk)	
Defense-Wide	0390	02	0708083D
Project		Name	
		Chemical Agents and Munitions Destruction	
MILCON			
Appn		BA	PE
Defense-Wide	0391	01	0708007D
Project		Name	
		Blue Grass Army Depot Ammunition Demilitarization (Sunk)	
		Pueblo Chemical Depot Ammunition Demilitarization Facility (Sunk)	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2011 \$M			BY 2011 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	8615.5	8615.5	9477.1	8915.6	9246.6	9246.6	9630.9
Procurement	0.0	0.0	--	0.0	0.0	0.0	0.0
Flyaway	--	--	--	0.0	--	--	0.0
Recurring	--	--	--	0.0	--	--	0.0
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	1365.3	1365.3	1501.8	1361.8	1370.5	1370.5	1359.2
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	9980.8	9980.8	N/A	10277.4	10617.1	10617.1	10990.1

Confidence Level

Confidence Level of cost estimate for current APB: 50%

The Independent Cost Estimate (ICE) to support Chemical Demilitarization-Assembled Chemical Weapons Alternatives Program, Milestone B decision, like all life-cycle cost estimates previously performed by the Cost Assessment and Program Evaluation (CAPE), is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Program (MDAP) programs. Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	3136	3136	3136
Procurement	0	0	0
Total	3136	3136	3136

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY\$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	4617.5	569.3	380.9	729.6	770.7	850.5	604.7	1107.7	9630.9
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MILCON	1359.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1359.2
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	5976.7	569.3	380.9	729.6	770.7	850.5	604.7	1107.7	10990.1
PB 2016 Total	5967.7	569.3	611.5	683.8	634.8	758.4	683.1	1081.5	10990.1
Delta	9.0	0.0	-230.6	45.8	135.9	92.1	-78.4	26.2	0.0

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	3136	0	0	0	0	0	0	0	0	3136
Production	0	0	0	0	0	0	0	0	0	0
PB 2017 Total	3136	0	0	0	0	0	0	0	0	3136
PB 2016 Total	3136	0	0	0	0	0	0	0	0	3136
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
0390 RDT&E Chemical Agents and Munitions Destruction, Defense							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	39.2
1998	--	--	--	--	--	--	4.0
1999	--	--	--	--	--	--	32.6
2000	--	--	--	--	--	--	108.3
2001	--	--	--	--	--	--	78.5
2002	--	--	--	--	--	--	22.2
2003	--	--	--	--	--	--	97.5
2004	--	--	--	--	--	--	167.3
2005	--	--	--	--	--	--	174.5
2006	--	--	--	--	--	--	52.5
2007	--	--	--	--	--	--	215.8
2008	--	--	--	--	--	--	305.7
2009	--	--	--	--	--	--	283.3
2010	--	--	--	--	--	--	452.8
2011	--	--	--	--	--	--	385.9
2012	--	--	--	--	--	--	401.8
2013	--	--	--	--	--	--	627.6
2014	--	--	--	--	--	--	592.2
2015	--	--	--	--	--	--	575.8
2016	--	--	--	--	--	--	569.3
2017	--	--	--	--	--	--	380.9
2018	--	--	--	--	--	--	729.6
2019	--	--	--	--	--	--	770.7
2020	--	--	--	--	--	--	850.5
2021	--	--	--	--	--	--	604.7
2022	--	--	--	--	--	--	560.8
2023	--	--	--	--	--	--	354.5
2024	--	--	--	--	--	--	159.4
2025	--	--	--	--	--	--	30.9
2026	--	--	--	--	--	--	2.1
Subtotal	3136	--	--	--	--	--	9630.9

Annual Funding 0390 RDT&E Chemical Agents and Munitions Destruction, Defense							
Fiscal Year	Quantity	BY 2011 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	49.0
1998	--	--	--	--	--	--	4.9
1999	--	--	--	--	--	--	39.4
2000	--	--	--	--	--	--	130.3
2001	--	--	--	--	--	--	93.4
2002	--	--	--	--	--	--	26.1
2003	--	--	--	--	--	--	114.2
2004	--	--	--	--	--	--	191.5
2005	--	--	--	--	--	--	194.3
2006	--	--	--	--	--	--	56.8
2007	--	--	--	--	--	--	227.8
2008	--	--	--	--	--	--	316.2
2009	--	--	--	--	--	--	289.7
2010	--	--	--	--	--	--	456.0
2011	--	--	--	--	--	--	374.3
2012	--	--	--	--	--	--	390.8
2013	--	--	--	--	--	--	601.9
2014	--	--	--	--	--	--	556.2
2015	--	--	--	--	--	--	533.6
2016	--	--	--	--	--	--	519.3
2017	--	--	--	--	--	--	340.9
2018	--	--	--	--	--	--	640.7
2019	--	--	--	--	--	--	663.5
2020	--	--	--	--	--	--	717.9
2021	--	--	--	--	--	--	500.4
2022	--	--	--	--	--	--	455.0
2023	--	--	--	--	--	--	282.0
2024	--	--	--	--	--	--	124.3
2025	--	--	--	--	--	--	23.6
2026	--	--	--	--	--	--	1.6
Subtotal	3136	--	--	--	--	--	8915.6

Annual Funding 0391 MILCON Chemical Demilitarization Construction, Defense		
Fiscal Year	TY \$M	
	Total Program	
2000	2.0	
2001	11.8	
2002	29.3	
2003	56.6	
2004	104.2	
2005	81.9	
2006	--	
2007	131.0	
2008	104.2	
2009	144.3	
2010	187.9	
2011	124.7	
2012	75.3	
2013	144.8	
2014	122.5	
2015	38.7	
Subtotal	1359.2	

Annual Funding 0391 MILCON Chemical Demilitarization Construction, Defense	
Fiscal Year	BY 2011 \$M
	Total Program
2000	2.4
2001	14.0
2002	34.0
2003	64.1
2004	114.8
2005	87.6
2006	--
2007	135.2
2008	106.1
2009	144.1
2010	184.4
2011	120.5
2012	71.8
2013	136.1
2014	111.9
2015	34.8
Subtotal	1361.8

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

None

Nuclear Costs

None

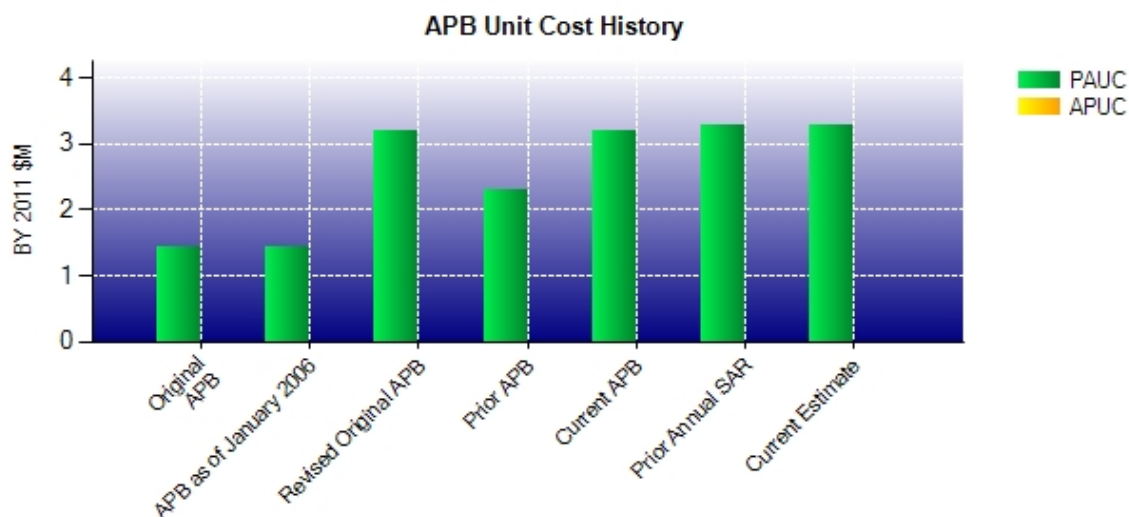
Unit Cost

Unit Cost Report

Item	BY 2011 \$M	BY 2011 \$M	% Change
	Current UCR Baseline (Mar 2012 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost			
Cost	9980.8	10277.4	
Quantity	3136	3136	
Unit Cost	3.183	3.277	+2.95
Average Procurement Unit Cost			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

Item	BY 2011 \$M	BY 2011 \$M	% Change
	Revised Original UCR Baseline (Mar 2012 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost			
Cost	9980.8	10277.4	
Quantity	3136	3136	
Unit Cost	3.183	3.277	+2.95
Average Procurement Unit Cost			
Cost	0.0	0.0	
Quantity	0	0	
Unit Cost	--	--	--

Unit Cost History



Item	Date	BY 2011 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Apr 2003	1.434	N/A	1.355	N/A
APB as of January 2006	Apr 2003	1.434	N/A	1.355	N/A
Revised Original APB	Mar 2012	3.183	N/A	3.386	N/A
Prior APB	Apr 2007	2.293	N/A	2.540	N/A
Current APB	Mar 2012	3.183	N/A	3.386	N/A
Prior Annual SAR	Dec 2014	3.267	N/A	3.504	N/A
Current Estimate	Dec 2015	3.277	N/A	3.504	N/A

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
3.386	-0.009	0.000	0.108	0.000	0.019	0.000	0.000	0.118	3.504

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	--	--	--	--	--	--	--	--	0.000

An APUC Unit Cost History is not available, since no Initial APUC Estimate had been calculated due to a lack of defined quantities.

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	N/A	N/A	N/A
Milestone III	N/A	N/A	N/A	N/A
IOC	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	N/A	N/A	2430.4	10990.1
Total Quantity	N/A	N/A	0	3136
PAUC	N/A	N/A	N/A	3.504

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	9246.6	--	1370.5	10617.1
Previous Changes				
Economic	+16.9	--	-0.7	+16.2
Quantity	--	--	--	--
Schedule	+308.1	--	--	+308.1
Engineering	--	--	--	--
Estimating	+59.3	--	-10.6	+48.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+384.3	--	-11.3	+373.0
Current Changes				
Economic	-42.2	--	-1.8	-44.0
Quantity	--	--	--	--
Schedule	+32.5	--	--	+32.5
Engineering	--	--	--	--
Estimating	+9.7	--	+1.8	+11.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	--	--	--	--
Adjustments	--	--	--	--
Total Changes	+384.3	--	-11.3	+373.0
CE - Cost Variance	9630.9	--	1359.2	10990.1
CE - Cost & Funding	9630.9	--	1359.2	10990.1

Summary BY 2011 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	8615.5	--	1365.3	9980.8
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+217.1	--	--	+217.1
Engineering	--	--	--	--
Estimating	+53.1	--	-5.2	+47.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+270.2	--	-5.2	+265.0
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+20.9	--	--	+20.9
Engineering	--	--	--	--
Estimating	+9.0	--	+1.7	+10.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+29.9	--	+1.7	+31.6
Adjustments	--	--	--	--
Total Changes	+300.1	--	-3.5	+296.6
CE - Cost Variance	8915.6	--	1361.8	10277.4
CE - Cost & Funding	8915.6	--	1361.8	10277.4

Previous Estimate: December 2014

RDT&E		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-42.2
Program costs re-phased over the FY 2017 through FY 2021 time period to reflect revised Program schedule. (Schedule)		+20.9	+32.5
Adjustment for current and prior escalation. (Estimating)		+9.0	+9.7
RDT&E Subtotal		+29.9	0.0

MILCON		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-1.8
Adjustment for current and prior escalation. (Estimating)		+1.7	+1.8
MILCON Subtotal		+1.7	0.0

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: Pueblo
Contractor: Bechtel National Inc.
Contractor Location: Pueblo, CO 81003
Contract Number: DAAA09-02-D-0025/1
Contract Type: Cost Plus Award Fee (CPAF)
Award Date: September 27, 2002
Definitization Date: September 30, 2002

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
178.2	N/A	2613	3379.2	N/A	2613	3626.0	3943.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional tasks being awarded. The initial contract price only included the initial design effort.

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2016)	-187.6	-7.9
Previous Cumulative Variances	-126.0	-15.5
Net Change	-61.6	+7.6

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to construction labor overruns in attempting the final push to recover the construction schedule. The balance was due to the September 2015 systemization rebaseline.

The favorable net change in the schedule variance is due to recovering the construction schedule in 2015, partially offset by falling behind schedule in systemization start up, and explosive destruction technology engineering, procurement, and construction execution.

Notes

This contract was initially a cost plus incentive fee, multi-phase Task Order (TO) contract. The restructured contract transitioned from an incentive fee structure to an award fee structure on September 26, 2013 via Modification 68. The Initial Contract Target Price (\$178.2M) only included the initial design effort. By December 2010, the restructured contract included the original contract (TOs 1 through 6) and a new contract covering Pre-Systemization and Systemization. Operations phase was added via Modification 95 in April 2015, and Closure phase will eventually be added. The Current Contract Target Price of \$3,379.2M incorporates all contract modifications through December 2015.

TO 1, which was definitized on September 30, 2002, required the SC to develop the Design Build Plan and was awarded for a total contract value of \$3.9M. The revised Budget at Completion (BAC) is \$3.6M. All deliverables are complete.

TO 2, which was definitized on May 5, 2003, required the SC to design the facility. (Design completion is now included in TO 6.) This task had a total contract value of \$173.5M when initiated in April 2003. A subsequent Stop Work Order budget adjustment issued in February 2012, resulted in an adjusted total contract value of \$142.1M. The revised BAC for this TO is \$127.8M. All deliverables are complete.

TO 3, which was definitized on December 14, 2004, required the SC to conduct special studies as required and support design and fabrication of first-of-a-kind equipment. This task has a total contract value of \$41.8M. The revised BAC for this TO is \$36.5M. All deliverables are complete.

TO 4, which was definitized on November 1, 2003, required the SC to provide Project Services support, including public outreach, to the contract. This task, which is complete, has a total contract value of \$52.5M and was primarily level of effort work. The revised BAC for this TO is \$49.4M.

TO 5 requires the SC to construct the PCAPP facilities. This task has a current total contract value of \$821.2M. The revised BAC for this TO is \$758.7M. The SC declared construction complete in December 2012 with exclusions. Exclusions were completed in FY 2016.

TO 6, which was definitized on September 7, 2005, required the SC to complete the optimized redesign. This task has a total contract value of \$97.6M. The revised BAC for this TO is \$87.5M. All deliverables are complete.

Systemization was awarded in two parts: Part 1, Pre-Systemization and Part 2, Systemization. Part 1, which includes work during the Construction phase associated with preparation of the Systemization phase documentation, was awarded in June 2009. Part 2, which includes all the major tasks, was awarded in December 2010. The total contract value of Systemization is \$878.7M. The revised BAC for this task is \$810.2M. Construction turn-over delays as well as discovery of plant deficiencies in design and construction have impacted Systemization work.

Operations was awarded via Modification 95 on April 9, 2015. The total contract value of Operations is \$1,341.3M. The revised BAC for this task is \$1,241.7M.

Estimate at Completion (EAC) Changes: The Contract Level EAC increased \$1,332.20M during CY 2015, from \$2,025.63M to \$3,357.83M; the primary driver of the EAC increase was the addition of Operations phase to the contract.

The Contract level EAC increase of \$1,332.20M is comprised of Task 3 FOAK/Energetics (-\$0.048M); Task 4 ProjectSupport (-\$0.034M); Task 5 Construction (-\$2.81M); Task 6 Redesign (+\$0.025M); Systemization Task (+\$98.54M); and Operations Task (+\$1,236.52M), which was added to the contract in April 2015.

Construction (Task 5)-

The decrease in the Task 5 EAC is primarily attributable to favorable adjustments to Workers Compensation costs.

The Systemization EAC increase of +\$98.54M (sum of distributed budget EACs in Control Accounts plus the Undistributed Budget) is primarily attributable to the additional 79-day forecasted schedule extension for Systemization from January 14, 2016, as of December 2014, to April 2, 2016, as of December 2015. The additional schedule extension is primarily due to the discovery of deficiencies in plant design and construction, which require correction before systemization can be

completed.

Contract Identification

Appropriation: RDT&E
Contract Name: Blue Grass
Contractor: Bechtel Parsons JV
Contractor Location: Richmond, KY 40475
Contract Number: DAAA09-03-D-0023/1
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: June 13, 2003
Definitization Date: June 13, 2003

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
138.0	N/A	523	2892.2	N/A	523	3077.3	3116.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional tasks and CLINs being awarded. The initial contract price only included the initial design effort.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/17/2016)	-128.4	-15.5
Previous Cumulative Variances	-68.3	-30.4
Net Change	-60.1	+14.9

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to construction (manual and non-manual) labor overruns in attempting the final push to recover the Construction schedule. The balance was due to the September 2015 Systemization rebaseline.

The favorable net change in the schedule variance is due to recovering the Construction schedule in 2015, partially offset by falling behind schedule in Systemization Start Up.

Notes

The Government awarded Contract W52P1J-09-C-0013 to Bechtel Parsons Blue Grass Team (BPBGT) on March 19, 2009 (CLIN structure). The Procuring Contracting Officer established and executed Contract W52P1J-09-C-0013 strictly as an administrative change which restructured and converted Contract DAAA09-03-D-0023 (the original competitively solicited and awarded indefinite delivery, indefinite quantity (IDIQ) contract) into Contract W52P1J-09-C-0013 (a multi-year, lifecycle, cost reimbursable, systems contract). Contract W52P1J-09-C-0013 permits the Government and BPBGT to complete project lifecycle planning and execution. This contract is a cost plus incentive fee CLIN contract. The total Negotiated Contract Cost (NCC) for this contract is \$2,615.2M (excluding fees of \$276.7M).

CLIN 002 (Construction Phase IV) was definitized via Contract Modification on March 31, 2011, and consists of completing all BGCAPP construction required for plant systemization and operations. Another Contract Modification was issued on July 11, 2013 to incorporate the FY 2013 Continued Resolution Authority impacts to this CLIN, followed by another Contract Modification issued on February 14, 2014, to incorporate transfer of scope to Systemization CLIN 003. This CLIN currently has a total contract value of \$1,263.3M (includes fee). The total work under this CLIN was 98.8 percent complete in November 2015, and has a Budget at Completion (BAC) of \$1136.7M representing 44.2 percent of the total BAC for both contracts. The current Estimate at Complete (EAC) for this CLIN is \$1268.1M.

CLIN 003 (Systemization) was partially definitized on June 4, 2011, consisting of planning, scheduling, staffing, supporting and managing the first FY of plant systemization (subsequently referred to as FY 2012 Pre-Systemization). The Balance of Systemization proposal was submitted in November 2011, and was awarded in September 2012. A Contract Modification was issued on February 14, 2014, to incorporate transfer of scope from Construction CLIN 002 to Systemization. Another Contract Modification was issued on December 1, 2014, to incorporate a cost avoidance by eliminating the EVMS flow down requirement for Teaming Subcontractors. This CLIN currently has a total contract value of \$632.0M (includes fee). The total work under this CLIN was 41.0 percent complete in November 2015, and has a BAC of \$567.1M representing 22.1 percent of the total BAC for both contracts. The current EAC for this CLIN is \$572.1M.

CLIN 006 (First of a Kind (FOAK) Part II) was definitized on May 31, 2011, and consists of manufacturing, testing and delivering six (6) Munitions Washout System cavity access machines, two (2) rocket cutting and shearing lines, two (2) neutralization system sampling stations, and three (3) Supercritical Water Oxidation (SCWO) systems with aluminum filtration systems. This CLIN currently has a total contract value of \$134.1M (includes fee). The total work under this CLIN is 100 percent complete, and has a BAC of \$116.2M representing 4.5 percent of the total BAC for both contracts. The EAC (i.e., final actual cost) for this this CLIN is \$113.5M, completed in September 2013.

CLIN 007 Explosive Destruction Technologies (EDT) Part "A" was definitized on May 31, 2011, and consisted of conducting a comprehensive feasibility study analysis and comparison of alternate approaches for processing problematic mustard munitions. The EDT Part "A" Extension awarded in September 2012, and EDT Part "B" was awarded in June 2013. In November 2013, an undefinitized portion of EDT Part "C" was established as authorized unpriced work based on the incremental proposed value through July 2014. The negotiated EDT Part "C" Extension was awarded via Contract Modification on June 30, 2014. This CLIN currently has a total contract value of \$211.2M (includes fee). The total work under this CLIN was 50.0 percent complete in November 2015, and has a BAC of \$177.3M representing 6.9 percent of the total BAC for both contracts. The current EAC for this CLIN is \$163.6M.

CLIN 008 Treaty Compliance was definitized via Contract Modification on February 25, 2015, and consists of all facilities, equipment, documentation services, personnel, and technical and administrative support necessary to destroy the onsite chemical weapons stockpile in accordance with the Chemical Weapons Convention (Treaty). This CLIN currently has a total contract value of \$4.1M (includes fee). The total work under this CLIN was 10.0 percent complete in November 2015, and has a BAC of \$3.3M representing 0.1 percent of the total BAC for both contracts. The current EAC for this CLIN is \$3.0M.

CLIN 009 Information Technology was definitized via Contract Modification on June 17, 2015, and consists of a Cybersecurity Risk Management Framework to ensure the security of the Main Plant Facility Control System, and the Customer First Agreement to keep it maintained. This CLIN currently has a total contract value of \$18.1M (includes fee). The total work under this CLIN was 6.0 percent complete in November 2015, and has a BAC of \$18.2M representing 0.7 percent of the total BAC for both contracts. The current EAC for this CLIN is \$18.7M.

EAC Changes:

The total EAC increased \$113.4M from the previous SAR from \$2,608.6M to \$2,722.0M. The percent complete for both contracts increased from 74.7 to 82.2 percent complete. The net EAC increase of \$113.4M reflects EAC increases to CLIN 003 (\$43.2M), CLIN 002 (\$36.6M), CLIN 009 (\$18.7M), CLIN 007 (\$11.2M), CLIN 008 (\$3.0M), and other (\$0.7M).

The EAC increase for CLIN 003 Systemization is primarily due to increases to the Start Up, Laboratory, and Engineering efforts mostly as a result of the rebaseline completed in September 2015, and recent scope transfers from Construction.

The EAC increase for CLIN 002 Construction is primarily due to cost overruns in the final push to recover the Construction schedule, particularly in Craft labor hours in the Electrical and Piping commodities, and the increased Construction Distributals supporting this effort.

The EAC increase associated with CLIN 008 Treaty Compliance and CLIN 009 Information Technology, were a result of establishing these CLINs via Contract Modifications.

The EAC increase for CLIN 007 EDT is primarily due to in-scope cost increases resulting from reconciling the budget and schedule to reflect the final EDT building subcontract award value.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	3136	0.00%
Production	0	0	0	--
Total Program Quantity Delivered	0	0	3136	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	10990.1	Years Appropriated	20
Expended to Date	5533.5	Percent Years Appropriated	66.67%
Percent Expended	50.35%	Appropriated to Date	6546.0
Total Funding Years	30	Percent Appropriated	59.56%

The above data is current as of December 31, 2015.

As of February 11, 2016, 11 DOT 3A cylinders, 265 105mm projectiles, 88 4.2-inch mortars, and 196 155mm projectiles have been destroyed.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:

Source of Estimate:

Quantity to Sustain:

Unit of Measure:

Service Life per Unit:

Fiscal Years in Service:

Sustainment Strategy

Sustainment Strategy statement from the January 2012 Acquisition Strategy for ACWA approved on February 3, 2012: Unlike other DoD acquisition programs, the ACWA Program does not result in fielded items for the warfighter. Upon successful performance of the contractual requirements, all United States chemical agent munitions stockpiles will be eliminated and the destruction facilities will be decontaminated, decommissioned, and demolished. Thus, there are no requirements for future sustainability. As part of the current contracts, the contractors are required to maintain and sustain the facilities until closure of the facilities.

Antecedent Information

No Antecedent.

Annual O&S Costs BY2011 \$M			
Cost Element	Chem Demil-ACWA		No Antecedent (Antecedent)
Unit-Level Manpower	0.000		0.000
Unit Operations	0.000		0.000
Maintenance	0.000		0.000
Sustaining Support	0.000		0.000
Continuing System Improvements	0.000		0.000
Indirect Support	0.000		0.000
Other	0.000		0.000
Total	--		--

Item	Total O&S Cost \$M			
	Chem Demil-ACWA			No Antecedent (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	N/A	N/A	N/A	N/A
Then Year	N/A	N/A	N/A	0.0

O&S Cost Variance		
Category	BY 2011 \$M	Change Explanations

Prior SAR Total O&S Estimates - Dec 2014 SAR	0.0
Programmatic/Planning Factors	0.0
Cost Estimating Methodology	0.0
Cost Data Update	0.0
Labor Rate	0.0
Energy Rate	0.0
Technical Input	0.0
Other	0.0
Total Changes	0.0
Current Estimate	0.0

Disposal Estimate Details**Date of Estimate:****Source of Estimate:****Disposal/Demilitarization Total Cost (BY 2011 \$M):** 0.0